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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/730,223

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Gregory T. Huber

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EXAMINER

SHOSHO, CALLIE E

ART UNIT

PAPER NUMBER

1714

MAIL DATE

DELIVERY MODE

07/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action Before the Filing of an Appeal Brief	Application No. 10/730,223	Applicant(s) HUBER ET AL.	
	Examiner Callie E. Shosho	Art Unit 1714	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 22 June 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
(a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
(b) ☐ They raise the issue of new matter (see NOTE below);
(c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
(d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☒ Applicant's reply has overcome the following rejection(s): 35 USC 112, second paragraph.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
The status of the claim(s) is (or will be) as follows:
Claim(s) allowed: _____.
Claim(s) objected to: _____.
Claim(s) rejected: 1-10, 16-22 and 24-36.
Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☐ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: _____.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

Callie E. Shosho
Primary Examiner
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Attachment to Advisory Action

1. Applicants' amendment and arguments filed 6/22/07 have been fully considered.

Applicants' amendment overcomes the 35 USC 112, second paragraph rejection of record. However, the amendment and arguments do not overcome the rejections of record under 35 USC 103 as set forth in paragraphs 6-7 of the office action mailed 3/22/07.

With respect to the rejections of record, namely, GB 1424517 in view of GB 1108261 as set forth in paragraph 6 of the office action mailed 3/22/07 and Johnson et al. (U.S. 7,056,962) as set forth in paragraph 7 of the office action mailed 3/22/07, applicants' argue that in order to arrive at the present invention, one must not only select polymer that is hydrocarbon as presently claimed from large number of polymers disclosed by GB 1108261 or Johnson et al. and that one also must choose that the hydrocarbon polymer have 50-200 carbon atoms as presently claimed.

It is noted that GB 1245517 discloses pigment dispersion comprising pigment, solvent, and polymeric colored dispersant of the formula $D-(Z-R)_n$ where D is dyestuff, Z is divalent bridging group including those possessing O or N, n is 1-8, and R is polymer. It is noted that GB 1424517 itself refers to GB 1108261 for specific examples of polymers (R) utilized in the polymeric colored dispersant and that GB 1108261 explicitly discloses the use of hydrocarbon such as polyisobutylene. While GB 1108261 discloses the use of other polymers, the fact remains that GB 1108261 explicitly discloses the use of polymer in the polymeric colored dispersant that is hydrocarbon such as polyisobutylene as presently claimed.

It is noted that the present claims require $C_{50}-C_{200}$ or $C_{100}-C_{150}$ hydrocarbon polymer while GB 1424517 discloses $C_{76}-C_{1538}$ hydrocarbon polymer. However, as set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior

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art”, a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Further, based on the desired properties of the polymer, i.e. molecular weight, viscosity, etc., it would have been within the skill level of one of ordinary skill in the art to choose the size of the polymer, i.e. number of repeating units and thus, number of carbon present.

In light of the explicit disclosure in GB 1424517 of polymer for the polymeric colored dispersant as presently claimed, i.e. polyisobutylene, it would have been obvious to one of ordinary skill in the art, absent evidence to the contrary, to choose any polymer, including hydrocarbon as presently claimed, in GB 1424517 and it further would have been obvious to one of ordinary skill in the art to utilize such hydrocarbon polymer, including C₅₀-C₂₀₀ or C₁₀₀-C₁₅₀ polymeric hydrocarbon as presently claimed, in the polymeric colored dispersant of GB 1424517 in order to produce dispersion with desired properties, and thereby arrive at the claimed invention.

It is further noted that Johnson et al. disclose modified pigment comprising the structure pigment-X-polymer[R] which corresponds to presently claimed A-(B-X)_n when n is 1 and wherein pigment, which corresponds to A, is carbon black or organic pigment, X, which corresponds to B, is linking moiety that is alkyl or aromatic group substituted with ether or amide group, and polymer[R], which corresponds to X, is obtained from 1-500 repeating units and includes polyethylene, polyisobutylene, or polystyrene. While it is agreed that Johnson et al. disclose that the polymer of the modified pigment of the formula pigment-X-polymer[R] wherein polymer[R] corresponds to presently claimed X, includes not only hydrocarbon as presently claimed but other polymers outside the scope of the present claims, the fact remains that Johnson

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et al. explicitly disclose the use of polymer that is hydrocarbon, i.e. polyethylene, polyisobutylene, or polystyrene, as presently claimed.

Further, given that Johnson et al. disclose that the polymer is obtained from 1-500 repeating units and given that isobutylene, for instance, has 4 carbon atoms (C_4H_8), it is calculated that the polyisobutylene of Johnson et al. has 4-2000 carbon atoms. As set forth in MPEP 2144.05, in the case where the claimed range “overlap or lie inside ranges disclosed by the prior art”, a *prima facie* case of obviousness exists, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990). Further, based on the desired properties of the polymer, i.e. molecular weight, viscosity, etc., it would have been within the skill level of one of ordinary skill in the art to choose the number of repeating units from which the polymer is obtained.

In light of the explicit disclosure in Johnson et al. of polymer for the modified pigment as presently claimed, i.e. polyisobutylene, it therefore would have been obvious to one of ordinary skill in the art, absent evidence to the contrary, to choose any polymer, including hydrocarbon as presently claimed, in Johnson et al. and it further would have been obvious to one of ordinary skill in the art to utilize such hydrocarbon polymer, including C_{50} - C_{200} or C_{100} - C_{150} polymeric hydrocarbon as presently claimed, in the modified pigment of Johnson et al. in order to produce dispersion with desired properties, and thereby arrive at the claimed invention.

Thus, given that each of the cited prior art disclose compound corresponding to presently claimed $A-(B-X)_n$ and explicitly disclose polymer corresponding to presently claimed X wherein the amount of carbon atoms of the polymer overlaps that presently claimed, it is the examiner's

position that each of the cited prior art, namely, GB 1424517 in combination with GB 1108261 and Johnson et al. remain relevant against the present claims.

Applicants point to the comparative data set forth on pages 10-13 of the present specification.

The data compares pigment dispersion comprising polymeric colored dispersant obtained from polyisobutylamine (examples 1-3) with pigment dispersion comprising dispersants found in U.S. 4,057,436 or U.S. 3,996,059. It is shown that the pigment dispersion of examples 1-3 is superior in terms of relative interfacial tension drop (RIFTD) or RIFTD and viscosity.

However, it is the examiner's position that the data is not persuasive for the following reasons. Firstly, it is not clear how many carbon atoms the polyisobutylamine of inventive examples 1-3 possesses or if this number is within the scope of the present claims. Further, while it is disclosed that the comparative examples utilize dispersants found in U.S. 4,057,436 or U.S. 3,996,059, there is no disclosure of which dispersants of these references are utilized. Given that there is no explicit disclosure of the dispersants utilized in the comparative examples, it is not clear if such dispersants are commensurate in scope with the "closest" prior art utilized in the rejections of record, namely, GB 1424517 or Johnson et al. Further, the data is not persuasive given that the data is not commensurate in scope with the scope of the present claims.

Specifically, the present claims require polymeric colored dispersant comprising the structure A-(B-X)_n where X is a branched or linear C₅₀-C₂₀₀ polymeric covalently linked hydrocarbon. Given that all the inventive examples utilize the same polyisobutylamine, i.e. that known under the

tradename FD-100, it is clear that there is only data for hydrocarbon possessing one amount of carbon atoms. As set forth in MPEP 716.02(d), whether unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, "objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support". In other words, the showing of unexpected results must be reviewed to see if the results occurred over the entire claimed range, *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980). Applicants have not provided data to show that the unexpected results do in fact occur for hydrocarbon possessing number of carbon atoms over the entire claimed range, i.e. C₅₀-C₂₀₀.


Applicants argue that the surprising and unexpected nature of the present invention is reinforced given that Johnson et al. disclose the use of solvent to adjust viscosity not the modified pigment which is in direct contrast to the present invention where the polymeric colored dispersant adjusts the viscosity.

However, on the one hand, while Johnson et al. disclose that the solvent is utilized to adjust the viscosity this does not mean that the modified pigment does not also adjust the viscosity. Given that the modified pigment of Johnson et al. corresponds to the presently claimed polymeric colored dispersant, it is clear that the modified pigment would also intrinsically adjust the viscosity of the pigment dispersion as does the presently claimed polymeric colored dispersant. On the other hand, as noted in Table 1 on page 12 of the present specification as well as applicant's comments on page 8 of the amendment filed 6/22/07, depending on the type of pigment utilized, the polymeric colored dispersant of the present invention may or may not affect

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the viscosity. That is, applicants note that when utilizing Pigment Yellow 12 in the polymeric colored dispersant, Table 1 shows that the present invention has about the same viscosity as the comparative examples. Thus, it is clear that it is not required that the polymeric colored dispersant of the present invention is utilized to adjust the viscosity.

In light of the above, it is the examiner's position that the rejections of record under 35 USC 103 remain relevant against the present claims.


Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
7/2/07